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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/435,613 11/08/99 ISHIHARA

M 0010-1052-0000

HM22/0710

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EXAMINER

PRATS, F

ART UNIT

PAPER NUMBER

1651

6

DATE MAILED:

07/10/01

RD 10-10-01

NA 11-10-01 (1ST)

Please find below and/or attached an Office communication concerning this application or proceeding.

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SEP 18 2001  
OFFICE OF PETITIONS

Commissioner of Patents and Trademarks

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JUL 11 2001  
OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

# Office Action Summary

Application No.

09/435,613

Applicant(s)

ISHIHARA ET AL

Examiner

Francisco C Prats

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

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## Applicant Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

1. The amendment filed May 8, 2001, has been received and entered. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.
2. Claim 19 has been cancelled.
3. Claims 9-18 are pending and are examined on the merits.

***Terminal Disclaimer***

4. The terminal disclaimer filed on May 8, 2001, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Pat. No. 6,060,289 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 102***

5. Claims 9, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al (U.S. Pat. 4,863,565).

As amended the claims require the production of cellulose having a width of 160 to 1000 nm by culturing a microorganism of the genus *Acetobacter* in the presence of a cell division inhibitor.

Johnson discloses the preparation of cellulose having a

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width of 0.05 to 0.2 microns (50 to 200 nm, well within the claimed range of widths) by culturing a microorganism of the genus *Acetobacter* in the presence of the fungicide Benlate. See col. 19, line 7 through col. 20, line 10. Note specifically that because the Benlate product is termed a fungicide, it must be considered a cell division inhibitor, since killing fungi or inhibiting fungal growth clearly results in inhibition of cell division. A holding of anticipation is clearly required.

***Claim Rejections - 35 USC § 103***

6. Claims 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al (U.S. Pat 4,863,565) and Iguchi et al (U.S. Pat. 4,742,164) in view of Hestrin et al (Nature 159:64-65 (1947)) and Townsley (U.S. Pat. 4,745,058).

As amended, the claims require the production of cellulose having a width of 160 to 1000 nm by culturing a microorganism of the genus *Acetobacter* in the presence of a cell division inhibitor.

As discussed above, Johnson discloses the preparation of cellulose having a width of 0.05 to 0.2 microns (50 to 200 nm, well within the claimed range of widths) by culturing a microorganism of the genus *Acetobacter* in the presence of the fungicide Benlate. See col. 19, line 7 through col. 20, line

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10. Moreover, as discussed in the previous office action, both Iguchi and Johnson clearly disclose the production of bacterial cellulose from a number of microorganisms, including *Acetobacter pasteurianus*, thereby suggesting the use of any strain of that species in such a process, including the claimed FERM BP-4176. Neither Iguchi nor Johnson explicitly discloses the inclusion of a cell division inhibitor in the culture.

Further still, as also discussed in the previous office action, both Hestrin and Johnson disclose that non-proliferating cells of the claim-designated microorganism produce cellulose. Thus, the artisan of ordinary skill at the time of applicant's invention would have been motivated to have included a cell division inhibitor in the culture medium when culturing the microorganism to ensure cellulose production. Thus, the artisan of ordinary skill clearly would have been motivated to have included a cell division inhibitor in the culturing processes disclosed in Iguchi and Johnson.

It is noted that neither Hestrin nor Johnson discloses including in the culture medium the specific compounds recited in claims 10-13 and 18. However, as discussed above, both Johnson and Townsley disclose and claims the use of an antibiotic in the production of bacterial cellulose, so as to prevent the unwanted growth of yeast and mold in the

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fermentation medium. See, e.g. Townsley at claim 8, also col.

2, lines 4 and 5. Thus, in view of Townsley's disclosure of the desirability of including antibiotics in a culture medium used to produce bacterial cellulose, the inclusion of known antibiotics, recited in claim 10-13 and 18, would have been further obvious at the time of applicant's invention. It is therefore respectfully submitted that a holding of obvious remains proper despite the amendment to the claims.

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Thus, when the claims are properly construed as broadly as possible, it is clear that the claim term "cell division inhibitor" encompasses agents which are microbiocidal or microbiostatic, including the agents used in the prior art.

Thus, it is respectfully submitted that the rejections of record are clearly proper when the claims are properly construed as broadly as possible.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE MONTH** shortened


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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C Prats whose telephone number is 703-308-3665. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

  
Francisco C Prats  
Primary Examiner  
Art Unit 1651

FCP  
July 9, 2001